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SEQUENCE LISTING

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<110> DRUILHE, PIERRE  
DAUBERSIES, PIERRE



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<150> US 08/973,642

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<170> PatentIn version 3.1

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Lys	Lys	Leu	Asn	Lys	Leu	Phe	Asn	Arg	Ser	Leu	Gly	Glu	Ser	Gln	Val	
				85					90					95		
Asn	Gly	Glu	Leu	Ala	Ser	Glu	Glu	Val	Lys	Glu	Lys	Ile	Leu	Asp	Leu	
			100					105					110			
Leu	Glu	Glu	Gly	Asn	Thr	Leu	Thr	Glu	Ser	Val	Asp	Asp	Asn	Lys	Asn	
		115					120					125				
Leu	Glu	Glu	Ala	Glu	Asp	Ile	Lys	Glu	Asn	Ile	Leu	Leu	Ser	Asn	Ile	
	130					135					140					
Glu	Glu	Pro	Lys	Glu	Asn	Ile	Ile	Asp	Asn	Leu	Leu	Asn	Asn	Ile	Gly	
145					150					155					160	
Gln	Asn	Ser	Glu	Lys	Gln	Glu	Ser	Val	Ser	Glu	Asn	Val	Gln	Val	Ser	
				165					170					175		
Asp	Glu	Leu	Phe	Asn	Glu	Leu	Leu	Asn	Ser	Val	Asp	Val	Asn	Gly	Glu	
			180					185					190			
Val	Lys	Glu	Asn	Ile	Leu	Glu	Glu	Ser	Gln	Val	Asn	Asp	Asp	Ile	Phe	
		195					200					205				
Asn	Ser	Leu	Val	Lys	Ser	Val	Gln	Gln	Glu	Gln	Gln	His	Asn	Val	Glu	
	210					215						220				
Glu	Lys	Val	Glu	Glu	Ser	Val	Glu	Glu	Asn	Asp	Glu	Glu	Ser	Val	Glu	
225					230					235					240	
Glu	Asn	Val	Glu	Glu	Asn	Val	Glu	Glu	Asn	Asp	Asp	Gly	Ser	Val	Ala	
				245					250					255		
Ser	Ser	Val	Glu	Glu	Ser	Ile	Ala	Ser	Ser	Val	Asp	Glu	Ser	Ile	Asp	
			260					265					270			
Ser	Ser	Ile	Glu	Glu	Asn	Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	
		275					280					285				



Pro Ser Val Val Glu Ser Val Ala Pro Ser Val Glu Glu Ser Val Glu  
 290 295 300

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala  
 305 310 315 320

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala  
 325 330 335

Glu Asn Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu Ile Val Ala  
 340 345 350

Pro Thr Val Glu Glu Ile Val Ala Pro Ser Val Val Glu Ser Val Ala  
 355 360 365

Pro Ser Val Glu Glu Ser Val Glu Glu Asn Val Glu Glu Ser Val Ala  
 370 375 380

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala  
 385 390 395 400

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala  
 405 410 415

Glu Asn Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu Ile Val Ala  
 420 425 430

Pro Thr Val Glu Glu Ile Val Ala Pro Ser Val Val Glu Ser Val Ala  
 435 440 445

Pro Ser Val Glu Glu Ser Val Glu Glu Asn Val Glu Glu Ser Val Ala  
 450 455 460

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala  
 465 470 475 480

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala  
 485 490 495

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala  
 500 505 510

Glu Asn Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu Ile Val Ala  
 515 520 525

Pro Thr Val Glu Glu Ile Val Ala Pro Ser Val Val Glu Ser Val Ala  
 530 535 540

Pro Ser Val Glu Glu Ser Val Glu Glu Asn Val Glu Glu Ser Val Ala  
 545 550 555 560

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala  
 565 570 575

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ile Val Ala  
 580 585 590

Pro Thr Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu Ile Val Ala  
 595 600 605

Pro Ser Val Val Glu Ser Val Ala Pro Ser Val Glu Glu Ser Val Glu  
 610 615 620

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala  
 625 630 635 640

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ile Val Ala  
 645 650 655

Pro Thr Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu Ile Val Ala  
 660 665 670

Pro Ser Val Val Glu Ser Val Ala Pro Ser Val Glu Glu Ser Val Glu  
 675 680 685

Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala  
 690 695 700

Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	705	710	715	720
Glu	Asn	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	725	730	735	
Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	Pro	Ser	Val	Val	Glu	Ser	Val	Ala	740	745	750	
Pro	Ser	Val	Glu	Glu	Ser	Val	Glu	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	755	760	765	
Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	770	775	780	
Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	785	790	795	800
Pro	Ser	Val	Glu	Glu	Ser	Val	Ala	Pro	Ser	Val	Glu	Glu	Ser	Val	Ala	805	810	815	
Glu	Asn	Val	Ala	Thr	Asn	Leu	Ser	Asp	Asn	Leu	Leu	Ser	Asn	Leu	Leu	820	825	830	
Gly	Gly	Ile	Glu	Thr	Glu	Glu	Ile	Lys	Asp	Ser	Ile	Leu	Asn	Glu	Ile	835	840	845	
Glu	Glu	Val	Lys	Glu	Asn	Val	Val	Thr	Thr	Ile	Leu	Glu	Asn	Val	Glu	850	855	860	
Glu	Thr	Thr	Ala	Glu	Ser	Val	Thr	Thr	Phe	Ser	Asn	Ile	Leu	Glu	Glu	865	870	875	880
Ile	Gln	Glu	Asn	Thr	Ile	Thr	Asn	Asp	Thr	Ile	Glu	Glu	Lys	Leu	Glu	885	890	895	
Glu	Leu	His	Glu	Asn	Val	Leu	Ser	Ala	Ala	Leu	Glu	Asn	Thr	Gln	Ser	900	905	910	

Glu Glu Glu Lys Lys Glu Val Ile Asp Val Ile Glu Glu Val Lys Glu  
 915 920 925

Glu Val Ala Thr Thr Leu Ile Glu Thr Val Glu Gln Ala Glu Glu Lys  
 930 935 940

Ser Ala Asn Thr Ile Thr Glu Ile Phe Glu Asn Leu Glu Glu Asn Ala  
 945 950 955 960

Val Glu Ser Asn Glu Asn Val Ala Glu Asn Leu Glu Lys Leu Asn Glu  
 965 970 975

Thr Val Phe Asn Thr Val Leu Asp Lys Val Glu Glu Thr Val Glu Ile  
 980 985 990

Ser Gly Glu Ser Leu Glu Asn Asn Glu Met Asp Lys Ala Phe Phe Ser  
 995 1000 1005

Glu Ile Phe Asp Asn Val Lys Gly Ile Gln Glu Asn Leu Leu Thr  
 1010 1015 1020

Gly Met Phe Arg Ser Ile Glu Thr Ser Ile Val Ile Gln Ser Glu  
 1025 1030 1035

Glu Lys Val Asp Leu Asn Glu Asn Val Val Ser Ser Ile Leu Asp  
 1040 1045 1050

Asn Ile Glu Asn Met Lys Glu Gly Leu Leu Asn Lys Leu Glu Asn  
 1055 1060 1065

Ile Ser Ser Thr Glu Gly Val Gln Glu Thr Val Thr Glu His Val  
 1070 1075 1080

Glu Gln Asn Val Tyr Val Asp Val Asp Val Pro Ala Met Lys Asp  
 1085 1090 1095

Gln Phe Leu Gly Ile Leu Asn Glu Ala Gly Gly Leu Lys Glu Met  
 1100 1105 1110

Phe	Phe	Asn	Leu	Glu	Asp	Val	Phe	Lys	Ser	Glu	Ser	Asp	Val	Ile
1115						1120					1125			
Thr	Val	Glu	Glu	Ile	Lys	Asp	Glu	Pro	Val	Gln	Lys	Glu	Val	Glu
1130						1135					1140			
Lys	Glu	Thr	Val	Ser	Ile	Ile	Glu	Glu	Met	Glu	Glu	Asn	Ile	Val
1145						1150					1155			
Asp	Val	Leu	Glu	Glu	Glu	Lys	Glu	Asp	Leu	Thr	Asp	Lys	Met	Ile
1160						1165					1170			
Asp	Ala	Val	Glu	Glu	Ser	Ile	Glu	Ile	Ser	Ser	Asp	Ser	Lys	Glu
1175						1180					1185			
Glu	Thr	Glu	Ser	Ile	Lys	Asp	Lys	Glu	Lys	Asp	Val	Ser	Leu	Val
1190						1195					1200			
Val	Glu	Glu	Val	Gln	Asp	Asn	Asp	Met	Asp	Glu	Ser	Val	Glu	Lys
1205						1210					1215			
Val	Leu	Glu	Leu	Lys	Asn	Met	Glu	Glu	Glu	Leu	Met	Lys	Asp	Ala
1220						1225					1230			
Val	Glu	Ile	Asn	Asp	Ile	Thr	Ser	Lys	Leu	Ile	Glu	Glu	Thr	Gln
1235						1240					1245			
Glu	Leu	Asn	Glu	Val	Glu	Ala	Asp	Leu	Ile	Lys	Asp	Met	Glu	Lys
1250						1255					1260			
Leu	Lys	Glu	Leu	Glu	Lys	Ala	Leu	Ser	Glu	Asp	Ser	Lys	Glu	Ile
1265						1270					1275			
Ile	Asp	Ala	Lys	Asp	Asp	Thr	Leu	Glu	Lys	Val	Ile	Glu	Glu	Glu
1280						1285					1290			
His	Asp	Ile	Thr	Thr	Thr	Leu	Asp	Glu	Val	Val	Glu	Leu	Lys	Asp
1295						1300					1305			

Val	Glu	Glu	Asp	Lys	Ile	Glu	Lys	Val	Ser	Asp	Leu	Lys	Asp	Leu
1310						1315					1320			
Glu	Glu	Asp	Ile	Leu	Lys	Glu	Val	Lys	Glu	Ile	Lys	Glu	Leu	Glu
1325						1330					1335			
Ser	Glu	Ile	Leu	Glu	Asp	Tyr	Lys	Glu	Leu	Lys	Thr	Ile	Glu	Thr
1340						1345					1350			
Asp	Ile	Leu	Glu	Glu	Lys	Lys	Glu	Ile	Glu	Lys	Asp	His	Phe	Glu
1355						1360					1365			
Lys	Phe	Glu	Glu	Glu	Ala	Glu	Glu	Ile	Lys	Asp	Leu	Glu	Ala	Asp
1370						1375					1380			
Ile	Leu	Lys	Glu	Val	Ser	Ser	Leu	Glu	Val	Glu	Glu	Glu	Lys	Lys
1385						1390					1395			
Leu	Glu	Glu	Val	His	Glu	Leu	Lys	Glu	Glu	Val	Glu	His	Ile	Ile
1400						1405					1410			
Ser	Gly	Asp	Ala	His	Ile	Lys	Gly	Leu	Glu	Glu	Asp	Asp	Leu	Glu
1415						1420					1425			
Glu	Val	Asp	Asp	Leu	Lys	Gly	Ser	Ile	Leu	Asp	Met	Leu	Lys	Gly
1430						1435					1440			
Asp	Met	Glu	Leu	Gly	Asp	Met	Asp	Lys	Glu	Ser	Leu	Glu	Asp	Val
1445						1450					1455			
Thr	Thr	Lys	Leu	Gly	Glu	Arg	Val	Glu	Ser	Leu	Lys	Asp	Val	Leu
1460						1465					1470			
Ser	Ser	Ala	Leu	Gly	Met	Asp	Glu	Glu	Gln	Met	Lys	Thr	Arg	Lys
1475						1480					1485			
Lys	Ala	Gln	Arg	Pro	Lys	Leu	Glu	Glu	Val	Leu	Leu	Lys	Glu	Glu
1490						1495					1500			

Val	Lys	Glu	Glu	Pro	Lys	Lys	Lys	Ile	Thr	Lys	Lys	Lys	Val	Arg
1505						1510					1515			
Phe	Asp	Ile	Lys	Asp	Lys	Glu	Pro	Lys	Asp	Glu	Ile	Val	Glu	Val
1520						1525					1530			
Glu	Met	Lys	Asp	Glu	Asp	Ile	Glu	Glu	Asp	Val	Glu	Glu	Asp	Ile
1535						1540					1545			
Glu	Glu	Asp	Ile	Glu	Glu	Asp	Lys	Val	Glu	Asp	Ile	Asp	Glu	Asp
1550						1555					1560			
Ile	Asp	Glu	Asp	Ile	Gly	Glu	Asp	Lys	Asp	Glu	Val	Ile	Asp	Leu
1565						1570					1575			
Ile	Val	Gln	Lys	Glu	Lys	Arg	Ile	Glu	Lys	Val	Lys	Ala	Lys	Lys
1580						1585					1590			
Lys	Lys	Leu	Glu	Lys	Lys	Val	Glu	Glu	Gly	Val	Ser	Gly	Leu	Lys
1595						1600					1605			
Lys	His	Val	Asp	Glu	Val	Met	Lys	Tyr	Val	Gln	Lys	Ile	Asp	Lys
1610						1615					1620			
Glu	Val	Asp	Lys	Glu	Val	Ser	Lys	Ala	Leu	Glu	Ser	Lys	Asn	Asp
1625						1630					1635			
Val	Thr	Asn	Val	Leu	Lys	Gln	Asn	Gln	Asp	Phe	Phe	Ser	Lys	Val
1640						1645					1650			
Lys	Asn	Phe	Val	Lys	Lys	Tyr	Lys	Val	Phe	Ala	Ala	Pro	Phe	Ile
1655						1660					1665			
Ser	Ala	Val	Ala	Ala	Phe	Ala	Ser	Tyr	Val	Val	Gly	Phe	Phe	Thr
1670						1675					1680			
Phe	Ser	Leu	Phe	Ser	Ser	Cys	Val	Thr	Ile	Ala	Ser	Ser	Thr	Tyr
1685						1690					1695			

Leu Leu Ser Lys Val Asp Lys Thr Ile Asn Lys Asn Lys Glu Arg  
 1700 1705 1710

Pro Phe Tyr Ser Phe Val Phe Asp Ile Phe Lys Asn Leu Lys His  
 1715 1720 1725

Tyr Leu Gln Gln Met Lys Glu Lys Phe Ser Lys Glu Lys Asn Asn  
 1730 1735 1740

Asn Val Ile Glu Val Thr Asn Lys Ala Glu Lys Lys Gly Asn Val  
 1745 1750 1755

Gln Val Thr Asn Lys Thr Glu Lys Thr Thr Lys Val Asp Lys Asn  
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Asn Lys Val Pro Lys Lys Arg Arg Thr Gln Lys Ser Lys  
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<221> CDS

<222> (2)..(1891)

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	Thr	Leu	Thr	Glu	Ser	Val	Asp	Asp	Asn	Lys	Asn	Leu	Glu	Glu	Ala	Glu	
1				5					10						15		

gat	ata	aag	gaa	aat	atc	tta	tta	agt	aat	ata	gaa	gaa	cca	aaa	gaa	97
Asp	Ile	Lys	Glu	Asn	Ile	Leu	Leu	Ser	Asn	Ile	Glu	Glu	Pro	Lys	Glu	
			20					25					30			



aat att att gac aat tta tta aat aat att gga caa aat tca gaa aaa	145
Asn Ile Ile Asp Asn Leu Leu Asn Asn Ile Gly Gln Asn Ser Glu Lys	
35 40 45	
caa gaa agt gta tca gaa aat gta caa gtc agt gat gaa ctt ttt aat	193
Gln Glu Ser Val Ser Glu Asn Val Gln Val Ser Asp Glu Leu Phe Asn	
50 55 60	
gaa tta tta aat agt gta gat gtt aat gga gaa gta aaa gaa aat att	241
Glu Leu Leu Asn Ser Val Asp Val Asn Gly Glu Val Lys Glu Asn Ile	
65 70 75 80	
ttg gag gaa agt caa gtt aat gac gat att ttt aat agt tta gta aaa	289
Leu Glu Glu Ser Gln Val Asn Asp Asp Ile Phe Asn Ser Leu Val Lys	
85 90 95	
agt gtt caa caa gaa caa caa cac aat gtt gaa gaa aaa gtt gaa gaa	337
Ser Val Gln Gln Glu Gln Gln His Asn Val Glu Glu Lys Val Glu Glu	
100 105 110	
agt gta gaa gaa aat gac gaa gaa agt gta gaa gaa aat gta gaa gaa	385
Ser Val Glu Glu Asn Asp Glu Glu Ser Val Glu Glu Asn Val Glu Glu	
115 120 125	
aat gta gaa gaa aat gac gac gga agt gta gcc tca agt gtt gaa gaa	433
Asn Val Glu Glu Asn Asp Asp Gly Ser Val Ala Ser Ser Val Glu Glu	
130 135 140	
agt ata gct tca agt gtt gat gaa agt ata gat tca agt att gaa gaa	481
Ser Ile Ala Ser Ser Val Asp Glu Ser Ile Asp Ser Ser Ile Glu Glu	
145 150 155 160	
aat gta gct cca act gtt gaa gaa atc gta gct cca act gtt gaa gaa	529
Asn Val Ala Pro Thr Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu	
165 170 175	
att gta gct cca agt gtt gta gaa agt gtg gct cca agt gtt gaa gaa	577
Ile Val Ala Pro Ser Val Val Glu Ser Val Ala Pro Ser Val Glu Glu	
180 185 190	
agt gta gct cca agt gtt gaa gaa agt gta gct gaa aat gtt gaa gaa	625
Ser Val Ala Pro Ser Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu	
195 200 205	
agt gta gct gaa aat gtt gaa gaa atc gta gct cca agt gtt gaa gaa	673
Ser Val Ala Glu Asn Val Glu Glu Ile Val Ala Pro Ser Val Glu Glu	
210 215 220	
agt gta gct gaa aat gtt gaa gaa agt gta gct gaa aat gtt gaa gaa	721
Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu	
225 230 235 240	

agt gta gct gaa aat gtt gaa gaa agt gta gct gaa aat gtt gaa gaa	769
Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu	
245 250 255	
agt gta gct gaa aat gtt gaa gaa atc gta gct cca act gtt gaa gaa	817
Ser Val Ala Glu Asn Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu	
260 265 270	
agt gta gct cca act gtt gaa gaa att gta gct cca act gtt gaa gaa	865
Ser Val Ala Pro Thr Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu	
275 280 285	
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Ser Val Ala Pro Thr Val Glu Glu Ile Val Val Pro Ser Val Glu Glu	
290 295 300	
agt gta gct cca agt gtt gaa gaa agt gta gct gaa aat gtt gaa gaa	961
Ser Val Ala Pro Ser Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu	
305 310 315 320	
agt gta gct gaa aat gtt gaa gaa agt gta gct gaa aat gtt gaa gaa	1009
Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu	
325 330 335	
agt gta gct gaa aat gtt gaa gaa agt gta gct gaa aat gtt gaa gaa	1057
Ser Val Ala Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu	
340 345 350	
atc gta gct cca agt gtt gaa gaa atc gta gct cca act gtt gaa gaa	1105
Ile Val Ala Pro Ser Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu	
355 360 365	
agt gtt gct gaa aac gtt gca aca aat tta tca gac aat ctt tta agt	1153
Ser Val Ala Glu Asn Val Ala Thr Asn Leu Ser Asp Asn Leu Leu Ser	
370 375 380	
aat tta tta ggt ggt atc gaa act gag gaa ata aag gac agt ata tta	1201
Asn Leu Leu Gly Gly Ile Glu Thr Glu Glu Ile Lys Asp Ser Ile Leu	
385 390 395 400	
aat gag ata gaa gaa gta aaa gaa aat gta gtc acc aca ata cta gaa	1249
Asn Glu Ile Glu Glu Val Lys Glu Asn Val Val Thr Thr Ile Leu Glu	
405 410 415	
aaa gta gaa gaa act aca gct gaa agt gta act act ttt agt aat ata	1297
Lys Val Glu Glu Thr Thr Ala Glu Ser Val Thr Thr Phe Ser Asn Ile	
420 425 430	
tta gag gag ata caa gaa aat act att act aat gat act ata gag gaa	1345
Leu Glu Glu Ile Gln Glu Asn Thr Ile Thr Asn Asp Thr Ile Glu Glu	
435 440 445	

aaa tta gaa gaa ctc cac gaa aat gta tta agt gcc gct tta gaa aat	1393
Lys Leu Glu Glu Leu His Glu Asn Val Leu Ser Ala Ala Leu Glu Asn	
450 455 460	
acc caa agt gaa gag gaa aag aaa gaa gta ata gat gta att gaa gaa	1441
Thr Gln Ser Glu Glu Glu Lys Lys Glu Val Ile Asp Val Ile Glu Glu	
465 470 475 480	
gta aaa gaa gag gtc gct acc act tta ata gaa act gtg gaa cag gca	1489
Val Lys Glu Glu Val Ala Thr Thr Leu Ile Glu Thr Val Glu Gln Ala	
485 490 495	
gaa gaa gag agc gaa agt aca att acg gaa ata ttt gaa aat tta gaa	1537
Glu Glu Glu Ser Glu Ser Thr Ile Thr Glu Ile Phe Glu Asn Leu Glu	
500 505 510	
gaa aat gca gta gaa agt aat gaa aaa gtt gca gag aat tta gag aaa	1585
Glu Asn Ala Val Glu Ser Asn Glu Lys Val Ala Glu Asn Leu Glu Lys	
515 520 525	
tta aac gaa act gta ttt aat act gta tta gat aaa gta gag gaa aca	1633
Leu Asn Glu Thr Val Phe Asn Thr Val Leu Asp Lys Val Glu Glu Thr	
530 535 540	
gta gaa att agc gga gaa agt tta gaa aac aat gaa atg gat aaa gca	1681
Val Glu Ile Ser Gly Glu Ser Leu Glu Asn Asn Glu Met Asp Lys Ala	
545 550 555 560	
ttt ttt agt gaa ata ttt gat aat gta aaa gga ata caa gaa aat tta	1729
Phe Phe Ser Glu Ile Phe Asp Asn Val Lys Gly Ile Gln Glu Asn Leu	
565 570 575	
tta aca ggt atg ttt cga agt ata gaa acc agt ata gta atc caa tca	1777
Leu Thr Gly Met Phe Arg Ser Ile Glu Thr Ser Ile Val Ile Gln Ser	
580 585 590	
gaa gaa aag gtt gat ttg aat gaa aat gtg gtt agt tcg att tta gat	1825
Glu Glu Lys Val Asp Leu Asn Glu Asn Val Val Ser Ser Ile Leu Asp	
595 600 605	
aat ata gaa aat atg aaa gaa ggt tta tta aat aaa tta gaa aat att	1873
Asn Ile Glu Asn Met Lys Glu Gly Leu Leu Asn Lys Leu Glu Asn Ile	
610 615 620	
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Ser Ser Thr Glu Gly Glu	
625 630	

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<211> 630

<212> PRT

<213> P. falciparum

<400> 5

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Asn Ile Ile Asp Asn Leu Leu Asn Asn Ile Gly Gln Asn Ser Glu Lys  
35 40 45

Gln Glu Ser Val Ser Glu Asn Val Gln Val Ser Asp Glu Leu Phe Asn  
50 55 60

Glu Leu Leu Asn Ser Val Asp Val Asn Gly Glu Val Lys Glu Asn Ile  
65 70 75 80

Leu Glu Glu Ser Gln Val Asn Asp Asp Ile Phe Asn Ser Leu Val Lys  
85 90 95

Ser Val Gln Gln Glu Gln Gln His Asn Val Glu Glu Lys Val Glu Glu  
100 105 110

Ser Val Glu Glu Asn Asp Glu Glu Ser Val Glu Glu Asn Val Glu Glu  
115 120 125

Asn Val Glu Glu Asn Asp Asp Gly Ser Val Ala Ser Ser Val Glu Glu  
130 135 140

Ser Ile Ala Ser Ser Val Asp Glu Ser Ile Asp Ser Ser Ile Glu Glu  
145 150 155 160

Asn Val Ala Pro Thr Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu  
165 170 175

Ile	Val	Ala	Pro	Ser	Val	Val	Glu	Ser	Val	Ala	Pro	Ser	Val	Glu	Glu	180	185	190
Ser	Val	Ala	Pro	Ser	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	195	200	205
Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ile	Val	Ala	Pro	Ser	Val	Glu	Glu	210	215	220
Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	225	230	235
Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	245	250	255
Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	260	265	270
Ser	Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	275	280	285
Ser	Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Val	Pro	Ser	Val	Glu	Glu	290	295	300
Ser	Val	Ala	Pro	Ser	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	305	310	315
Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	325	330	335
Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	340	345	350
Ile	Val	Ala	Pro	Ser	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	355	360	365
Ser	Val	Ala	Glu	Asn	Val	Ala	Thr	Asn	Leu	Ser	Asp	Asn	Leu	Leu	Ser	370	375	380

Asn Leu Leu Gly Gly Ile Glu Thr Glu Glu Ile Lys Asp Ser Ile Leu  
 385 390 395 400

Asn Glu Ile Glu Glu Val Lys Glu Asn Val Val Thr Thr Ile Leu Glu  
 405 410 415

Lys Val Glu Glu Thr Thr Ala Glu Ser Val Thr Thr Phe Ser Asn Ile  
 420 425 430

Leu Glu Glu Ile Gln Glu Asn Thr Ile Thr Asn Asp Thr Ile Glu Glu  
 435 440 445

Lys Leu Glu Glu Leu His Glu Asn Val Leu Ser Ala Ala Leu Glu Asn  
 450 455 460

Thr Gln Ser Glu Glu Glu Lys Lys Glu Val Ile Asp Val Ile Glu Glu  
 465 470 475 480

Val Lys Glu Glu Val Ala Thr Thr Leu Ile Glu Thr Val Glu Gln Ala  
 485 490 495

Glu Glu Glu Ser Glu Ser Thr Ile Thr Glu Ile Phe Glu Asn Leu Glu  
 500 505 510

Glu Asn Ala Val Glu Ser Asn Glu Lys Val Ala Glu Asn Leu Glu Lys  
 515 520 525

Leu Asn Glu Thr Val Phe Asn Thr Val Leu Asp Lys Val Glu Glu Thr  
 530 535 540

Val Glu Ile Ser Gly Glu Ser Leu Glu Asn Asn Glu Met Asp Lys Ala  
 545 550 555 560

Phe Phe Ser Glu Ile Phe Asp Asn Val Lys Gly Ile Gln Glu Asn Leu  
 565 570 575

Leu Thr Gly Met Phe Arg Ser Ile Glu Thr Ser Ile Val Ile Gln Ser  
 580 585 590

Glu Glu Lys Val Asp Leu Asn Glu Asn Val Val Ser Ser Ile Leu Asp  
595 600 605

Asn Ile Glu Asn Met Lys Glu Gly Leu Leu Asn Lys Leu Glu Asn Ile  
610 615 620

Ser Ser Thr Glu Gly Glu  
625 630

<210> 6

<211> 28

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 6

gtgatgaact ttttaatgaa ttattaaa

28

<210> 7

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 7

tggtgttctt gttgaacact ttttactaa

29

<210> 8

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 8

ggtatcgaaa ctgaggaaat aaagg

25

<210> 9

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Synthetic DNA

<400> 9

catagcagga acatcaacat ccac

24

<210> 10

<211> 50

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 10

Arg	Asp	Glu	Leu	Phe	Asn	Glu	Leu	Leu	Asn	Ser	Val	Asp	Val	Asn	Gly
1				5					10					15	



Glu Val Lys Glu Asn Ile Leu Glu Glu Ser Gln Val Asn Asp Asp Ile  
20 25 30

Phe Asn Ser Leu Val Lys Ser Val Gln Gln Glu Gln Gln His Asn Val  
35 40 45

Glu Glu  
50

<210> 11

<211> 100

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 11

Val Glu Glu Ser Val Glu Glu Asn Asp Glu Glu Ser Val Glu Glu Asn  
1 5 10 15

Val Glu Glu Asn Val Glu Asn Asn Asp Asp Gly Ser Val Ala Ser Ser  
20 25 30

Val Glu Glu Ser Ile Ala Ser Ser Val Asp Glu Ser Ile Asp Ser Ser  
35 40 45

Ile Glu Glu Asn Val Ala Pro Thr Val Glu Glu Ile Val Ala Pro Thr  
50 55 60

Val Glu Glu Ile Val Ala Pro Ser Val Val Glu Lys Cys Ala Pro Ser  
65 70 75 80

Val Glu Glu Ser Val Ala Pro Ser Val Glu Glu Ser Val Ala Glu Met  
85 90 95

Leu Lys Glu Arg  
100

<210> 12

<211> 47

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 12

Arg Asp Glu Leu Phe Asn Glu Leu Leu Asn Ser Val Asp Val Asn Gly  
1 5 10 15

Glu Val Lys Glu Asn Ile Leu Glu Glu Ser Gln Val Asn Asp Asp Ile  
20 25 30

Phe Asn Ser Leu Val Lys Ser Val Gln Gln Glu Gln Gln His Asn  
35 40 45

<210> 13

<211> 26

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 13

Asp Glu Leu Phe Asn Glu Leu Leu Asn Ser Val Asp Val Asn Gly Glu  
1 5 10 15

Val Lys Glu Asn Ile Leu Glu Glu Ser Gln  
20 25

<210> 14

<211> 27

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 14

Leu Glu Glu Ser Gln Val Asn Asp Asp Ile Phe Ser Asn Ser Leu Val  
1 5 10 15

Lys Ser Val Gln Gln Glu Gln Gln His Asn Val  
20 25

<210> 15

<211> 28

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 15

Val Glu Ser Val Ala Pro Ser Val Glu Glu Ser Val Ala Pro Ser Val  
1 5 10 15

Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser Val  
20 25

<210> 16

<211> 20

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 16

Leu Leu Ser Asn Ile Glu Glu Pro Lys Glu Asn Ile Ile Asp Asn Leu  
1 5 10 15

Leu Asn Asn Ile  
20

<210> 17

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 17

Val Glu Glu Ser  
1

<210> 18

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 18

Val Glu Glu Asn  
1

<210> 19

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 19

Val Glu Glu Ile  
1

<210> 20

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 20

Val Ala Pro Ser  
1

<210> 21

<211> 56

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 21

Val Glu Glu Lys Val Glu Glu Ser Val Glu Glu Asn Asp Glu Glu Ser  
1 5 10 15

Val Glu Glu Asn Val Glu Glu Asn Val Glu Glu Asn Asp Asp Gly Ser  
20 25 30

Val Ala Ser Ser Val Glu Glu Ser Ile Ala Ser Ser Val Asp Glu Ser  
35 40 45

Ile Asp Ser Ser Ile Glu Glu Asn  
50 55

<210> 22

<211> 540

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 22

Val Ala Pro Thr Val Glu Glu Ile Val Ala Pro Ser Val Val Glu Ser  
1 5 10 15

Val Ala Pro Ser Val Glu Glu Ser Val Glu Glu Asn Val Glu Glu Ser  
20 25 30

Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
		35					40						45		
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ile
		50				55					60				
Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	Ile
65					70					75					80
Val	Ala	Pro	Ser	Val	Val	Glu	Ser	Val	Ala	Pro	Ser	Val	Glu	Glu	Ser
				85					90					95	
Val	Glu	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
			100					105					110		
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
		115					120					125			
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ile
		130				135					140				
Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	Ile
145					150					155					160
Val	Ala	Pro	Ser	Val	Val	Glu	Ser	Val	Ala	Pro	Ser	Val	Glu	Glu	Ser
				165					170					175	
Val	Glu	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
			180					185					190		
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
		195					200					205			
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
		210				215					220				
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ile
225					230					235					240

Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	Ile
				245					250					255	
Val	Ala	Pro	Ser	Val	Val	Glu	Ser	Val	Ala	Pro	Ser	Val	Glu	Glu	Ser
			260					265					270		
Val	Glu	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
		275					280					285			
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
	290					295					300				
Val	Ala	Glu	Asn	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	Ile
305					310					315				320	
Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	Pro	Ser	Val	Val	Glu	Ser
				325					330					335	
Val	Ala	Pro	Ser	Val	Glu	Glu	Ser	Val	Glu	Glu	Asn	Val	Glu	Glu	Ser
			340					345					350		
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
		355					360					365			
Val	Ala	Glu	Asn	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	Ile
	370					375					380				
Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	Pro	Ser	Val	Val	Glu	Ser
385					390					395				400	
Val	Ala	Pro	Ser	Val	Glu	Glu	Ser	Val	Glu	Glu	Asn	Val	Glu	Glu	Ser
				405					410					415	
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
			420					425					430		
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ile
		435					440					445			



Val Ala Pro Thr Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu Ile  
 450 455 460

Val Ala Pro Ser Val Val Glu Ser Val Ala Pro Ser Val Glu Glu Ser  
 465 470 475 480

Val Glu Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser  
 485 490 495

Val Ala Glu Asn Val Glu Glu Ser Val Ala Glu Asn Val Glu Glu Ser  
 500 505 510

Val Ala Pro Thr Val Glu Glu Ile Val Ala Pro Ser Val Glu Glu Ser  
 515 520 525

Val Ala Pro Ser Val Glu Glu Ser Val Ala Glu Asn  
 530 535 540

<210> 23

<211> 39

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 23

Asp Glu Asp Ile Glu Glu Asp Val Glu Glu Asp Ile Glu Glu Asp Ile  
 1 5 10 15

Glu Glu Asp Lys Val Glu Asp Ile Asp Glu Asp Ile Asp Glu Asp Ile  
 20 25 30

Gly Glu Asp Lys Asp Glu Val  
 35

<210> 24

<211> 56

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 24

Val Glu Glu Lys Val Glu Glu Ser Val Glu Glu Asn Asp Glu Glu Ser  
1 5 10 15

Val Glu Glu Asn Val Glu Glu Asn Val Glu Glu Asn Asp Asp Gly Ser  
20 25 30

Val Ala Ser Ser Val Glu Glu Ser Ile Ala Ser Ser Val Asp Glu Ser  
35 40 45

Ile Asp Ser Ser Ile Glu Glu Asn  
50 55

<210> 25

<211> 212

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 25

Val Ala Pro Thr Val Glu Glu Ile Val Ala Pro Thr Val Glu Glu Ile  
1 5 10 15

Val	Ala	Pro	Ser	Val	Val	Glu	Ser	Val	Ala	Pro	Ser	Val	Glu	Glu	Ser
			20					25					30		
Val	Ala	Pro	Ser	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
		35					40					45			
Val	Ala	Glu	Asn	Val	Glu	Glu	Ile	Val	Ala	Pro	Ser	Val	Glu	Glu	Ser
	50					55					60				
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
65					70					75					80
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
				85					90					95	
Val	Ala	Glu	Asn	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	Ser
			100					105					110		
Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	Ser
		115					120					125			
Val	Ala	Pro	Thr	Val	Glu	Glu	Ile	Val	Val	Pro	Ser	Val	Glu	Glu	Ser
		130				135					140				
Val	Ala	Pro	Ser	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
145					150					155					160
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ser
				165					170					175	
Val	Ala	Glu	Asn	Val	Glu	Glu	Ser	Val	Ala	Glu	Asn	Val	Glu	Glu	Ile
			180					185					190		
Val	Ala	Pro	Ser	Val	Glu	Glu	Ile	Val	Ala	Pro	Thr	Val	Glu	Glu	Ser
		195					200					205			
Val	Ala	Glu	Asn												
			210												

<210> 26

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 26

Val Val Glu Ser  
1

<210> 27

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 27

Val Ala Glu Asn  
1

<210> 28

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 28

Val Ala Pro Thr  
1

<210> 29

<211> 4

<212> PRT

<213> Artificial Sequence

<220>

<223> Synthetic Peptide

<400> 29

Val Val Pro Ser  
1